NOAA Teacher at Sea
John Schneider
Onboard NOAA Ship *Fairweather*
July 7 – August 8, 2009

NOAA Teacher at Sea: John E Schneider
NOAA Ship *Fairweather (S-220)*
Mission: FISHPAC
Geographical Area: Bering Sea
Dates: July 30 – August 1, 2009

Position
Bristol Bay – Bering Sea

Weather Data from the Bridge
Weather System: nice all 3 days
Barometer: steady
Wind: light and variable
Temperature: low 7.0º C
Sea State: < 3-4 feet

Science and Technology Log
We have made about 30 stops along the tracklines for bottom samples as described in a prior log. When the SeaBoss comes to the surface, the scientists check to see if it grabbed an adequate sample. Sometimes it will strike the bottom at a bad angle, land on a rock, release prematurely or catch a big piece between the halves of the grabber and lose the sample on the way up. But on the 90% of deployments that are successful, the sample is emptied into a large bin and taken to the sifting table. It is washed with salt water and the critters within the sample are collected.

This is the bottom sample after it has come straight from the water and into the collection bin.

It looks pretty gross when you pull it up and the scientists estimate how full the sampler was, how deep it went into the bottom and describe the color and texture of the sediment. All of these criteria go into the evaluation of the bottom.

This is the sample in the sifter box. The screen at the bottom has a 1 millimeter mesh which allows anything less than 1 mm to be washed through and overboard. It can take anywhere from 2-6 minutes to screen out the sample depending on the sediment grain size.

The bottom sample has been moved from the collection bin into a sifter box.

This is a screened sample from a relatively shallow grab (probably <150 feet.) One of the interesting things that Dr. McConnaughey and his team have determined is that the wave energy in the Bering Sea in the winter extends down to almost 250 feet! This wave action carries away the finer sediments which leaves a coarser bottom. The coarse bottom has interstitial spaces that allow for animals to burrow and survive. The "cashew-looking" critters are members of the Phylum Echinodermata, Class Holothuroidea (Sea Cucumbers). They represented a significant portion of several of our samples.

After it has been sifted out, the bottom sample reveals all the things it was hiding.

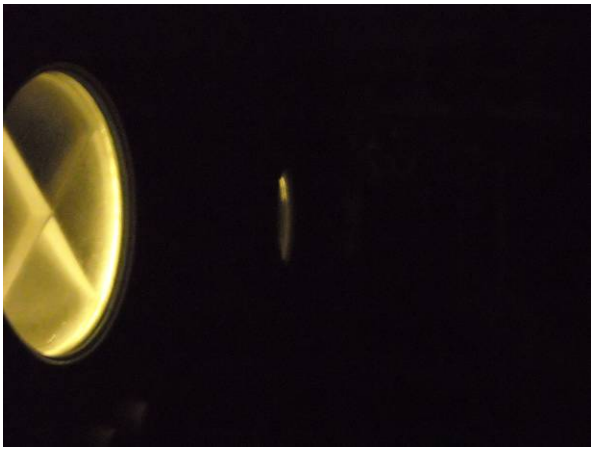
By establishing this correlation between sediment and animals present, and integrating that with gut analyses done on other ships catching target species at other times and cross-referencing that information with hydrographic survey information, it may be possible in the future to be able to predict what species will inhabit what areas. This type of data is absolutely essential to maintain a sustainable yield in the fishery and avoid depletion of the resource. It is environmental stewardship at the highest level.

Personal Log

I've been very fortunate in my life that this is my third time out to sea for more than just a day or so. The first time was almost 30 years ago in grad school in California (about 2 weeks), the second time in January of 1991 going from SC to the US Virgin Islands (a week) and not these legs with the Fairweather. One of the things I had forgotten was how dark it gets at sea at night. Even though dawn this leg is about 0615 and sunset is around 2300, we have been conducting 24-hour ops for most of the time. So we'll be deploying the SeaBoss at all hours. I took one of

these pictures with a flash and then turned the flash off and took the second. No explanation necessary. IT'S REAL DARK! SCARY DARK!

Starboard breezeway with flash



And without!

As you can see, there's plenty of light on the fantail to work, but outside our little orb of light, it's real dark! That's Weston Renoud and Adam Argento deploying the MVP fish.

Questions for You to Investigate

The conversion formula for changing ºC to ºF is really quite simple.

ºF = 1.8 (ºC) + 32. For example, 10ºC would be converted thus:

ºF = 1.8 (10 ºC) + 32 → 18 + 32 → 50ºF

By the way, 10ºC is a warm day here!

Something to Think About

This line is laid out in a figure 8. Why would this be a good way to have a line arranged if it has to be paid out gradually rather than in a coil?

The next couple days should be interesting. CO says we have some weather coming!